

**State of California  
Little Hoover Commission**

**Hearing on Special Districts' Adaptation to Climate Change  
October 27, 2016**



**Written Testimony Prepared by  
Melanie Richardson, Interim Chief Operating Officer-Watersheds  
Santa Clara Valley Water District**

**Santa Clara Valley Water District  
5750 Almaden Expressway  
San Jose, CA 95118  
(408) 265-2600  
[www.valleywater.org](http://www.valleywater.org)  
[www.valleywaternews.org](http://www.valleywaternews.org)**

## TABLE OF CONTENTS

## Page Number

I. INTRODUCTION .....	1
A. CLIMATE CHANGE IN CALIFORNIA .....	1
B. SUMMARY OF THE DISTRICT'S EFFORTS .....	1
C. SYNOPSIS OF THE DISTRICT'S CLIMATE CHANGE MITIGATION STRATEGIES.....	3
D. SYNOPSIS OF THE DISTRICT'S CLIMATE CHANGE ADAPTATION RESPONSES .....	3
II. EVOLUTION OF THE BOARD'S POLICIES ON CLIMATE CHANGE .....	4
A. GOVERNANCE PROCESS POLICY .....	5
B. ENDS POLICY .....	5
C. EXECUTIVE LIMITATION POLICY .....	6
D. GLOSSARY OF POLICY TERMINOLOGY .....	6
III. RESPONSES TO SPECIFIC LITTLE HOOVER COMMISSION INQUIRIES TO THE DISTRICT .....	6
A. HISTORY AND OVERVIEW OF THE SANTA CLARA VALLEY WATER DISTRICT .....	6
B. THE DISTRICT'S OPERATIONS & ROLE WITHIN THE BAY AREA METROPOLITAN LANDSCAPE .....	8
C. CHALLENGES DUE TO CLIMATE CHANGE .....	9
C.1. Flood Protection Challenges due to Climate Change .....	9
C.2. Water Supply Challenges due to Climate Change.....	9
C.3. Ecosystem Resiliency to Combat Climate Change.....	10
C.4. Compound Threats to Services – Seismically Active Region .....	11
D. HISTORIC FLOODING THREATS AND ANTICIPATED CHANGES DUE TO CLIMATE CHANGE .....	11
E. THE SOUTH SAN FRANCISCO BAY SHORELINE STUDY AND PROJECT .....	12
F. SHORELINE STUDY AND PROJECT COSTS & TIMELINE .....	14
G. INFRASTRUCTURE FINANCING: PROPERTY TAXES, FEES, AND RESERVES .....	15
H. CHALLENGES AND BARRIERS TO RESOURCES FOR COMBATING CLIMATE CHANGE .....	16
I. COMMUNITY ENGAGEMENT AND DIGITAL RESOURCES .....	16
J. REGIONAL SOLUTIONS TO ADDRESS FLOODING AND SEA LEVEL RISE IN SOUTH BAY .....	17
K. ENHANCING REGIONAL PARTNERSHIPS TO FORTIFY OUR RESPONSE TO CLIMATE CHANGE .....	18
L. OUR NEEDS FROM THE STATE FOR FUNDING, LEGISLATION, AND REGULATORY ACTION .....	19
L.1. Improve Permitting Process Efficiency for Anticipated Maintenance Activities .....	19
L.2. Improve Permitting for Routine Channel Maintenance .....	20
L.3. Improve Coordination of Mitigation Requirements Among Regulatory Agencies .....	21
L.4. Allow Public Entities to Use the Other Financial Assurance Mechanisms Enumerated in Federal and State Laws for Long-Term Management of Compensatory Mitigation Sites ...	21
L.5. Improve Permitting Agencies Timeliness and Consistency with Other Plans Approved through the Environmental Review Process. ....	22
L.6. Improve Permitting Staff Inefficiencies.....	23
M. RECOMMENDATIONS FOR EVALUATING SPECIAL DISTRICTS' RESPONSES TO CLIMATE CHANGE.....	24
IV. CONCLUSION.....	25

## I. INTRODUCTION

The Santa Clara Valley Water District (hereinafter “District”) manages an integrated water resources system that includes the provision of flood protection, the supply of clean, safe water, and environmental stewardship of waterways on behalf of Santa Clara County’s nearly 2 million residents in the tech capital of the world.

Managing climate change-related uncertainties, vulnerabilities, and risks is critical to fulfill our mission. Warmer temperatures, different patterns of precipitation and runoff, reduced snow pack, and rising sea levels could profoundly affect the District’s ability to provide clean, reliable water supply, natural flood protection, and water resources stewardship. Key components of the District’s response to climate change include a set of progressive policies, discussed below, which enshrine our commitment to the environment, meeting the challenges of climate change, and reducing our carbon footprint.

### A. CLIMATE CHANGE IN CALIFORNIA

Global warming is caused by a phenomenon known as the greenhouse effect, which slowly warms the planet. The greenhouse effect is caused by an increase in the quantity of certain atmospheric gases, most notably carbon dioxide, which reduce the ability of heat to escape from the atmosphere. Over the past century, the earth’s average temperature has risen by 1.4°F, and is projected to rise over the next hundred years anywhere between another 2°F to 11.5°F. These small changes in the average temperature of the planet can translate to large shifts in climate and weather. This is what the District understands to be climate change. California is vulnerable to climate change impacts on water security due to the reliance on snowmelt driven imported water.

Evidence of climate change is already being observed in California. In the last century, the California coast has seen almost 8 inches of sea level rise, the average April 1 snow-pack in the Sierra Nevada region has decreased, and wildfires are becoming more frequent, longer, and more widespread. Future projections for the Southwestern US indicate that reduced quantity of surface water from local runoff is likely. Climate models suggest a drying tendency and a decline in the frequency of precipitation events.

### B. SUMMARY OF THE DISTRICT’S EFFORTS

While many of the most severe climate challenges are far into the future when compared to the District’s day-to-day operational challenges, we consider these potential effects in our planning for the future, in order to fulfill our mission to provide Silicon Valley safe, clean water for a healthy life, environment, and economy.

Summarily, toward that concern for each of our three distinct functions, the District’s water supply vulnerabilities to climate change include more frequent and severe droughts, a decrease in imported water supplies as a result of both a potential reduction in snow pack and shift in the timing of runoff, a decrease in local surface water supplies as a result of reduced precipitation, changes in surface water quality associated with changes in flows and temperature, and changes in imported water quality due to salinity intrusion and/or levee failures in the Delta.

With regard to our flood protection activities, two primary challenges posed by climate change are the effects of sea level rise and the changes in hydrology, which can occur even as the region heats up or becomes drier. While inches of sea level rise may not seem to be a grave

threat, even slight increases significantly increase the danger posed, when accounting for how high and low tides exacerbate the impact. Additionally, historic hydrologic patterns are expected to change and extreme weather events such as storms are projected to increase in intensity. Extreme weather events and storms present their own challenges for flood protection efforts, and when the potential for increased storm surges or storm severity are combined with the effects of sea level rise, our flood protection challenges increase immensely. As if these challenges were not difficult enough, the problems they pose are compounded by the myriad of regulatory issues we face, which are delineated below in full in section III.L.

Climate change also has the potential to affect ecosystems in a variety of ways that could affect the District's progress on water resource management and environmental stewardship. Changes in weather patterns may affect species' natural rhythms and ability to thrive, and may compromise their ability to compete with invasive species.

In response to these various threats to our three distinct functions, the District has responded comprehensively. Demonstrative examples of our current efforts, programs, and policies that address the risks of climate change include the following:

- Capital projects that will combat sea level rise<sup>1</sup>
- Climate Change Action and Adaptation Plan to be completed in 2019
- Carbon neutrality by 2020 Policy
- Climate Change Adaptation and Mitigation Framework Team, comprised of multi-disciplinary subject-matter experts at the District (on-going)
- 2015 Urban Water Master Plan
- 2012 Water Supply and Infrastructure Master Plan and its current update: Water Supply Master Plan, scheduled for completion in 2017
- Infrastructure Reliability Project (2016)
- Integrated Water Resources Management Plan – “One Water” (on-going, county wide overview and Coyote Watershed in FY16)
- South Bay Salt Pond Restoration Program planning (on-going, in partnership with the U.S. Fish and Wildlife Services and Coastal Conservancy)
- San Francisco Bay regional Coastal Hazard Adaptation and Resilience Group (on-going, multi federal, state, and local agencies)
- Bay Area Regional Reliability (BARR) Project
- Silicon Valley 2.0 (in collaboration with Santa Clara County and other agencies)
- Capital Improvement Projects
  - Inclusion of Environmental Sustainability and Protection from Sea Level Rise as prioritization criteria when staff analyze and Capital Investment Project proposals
- Related efforts to Carbon Neutrality by 2020 Policy
  - Climate Investment Divestment Restriction
  - District's Energy Optimization Plan
  - Green Business Strategy (support County's green business program)
- Other projects that support climate change type risks:
  - Local Hazard Mitigation Plan
  - Power Reliability Planning

---

<sup>1</sup> San Francisco Bay Shoreline Project, South Bay Salt Ponds Restoration, Palo Alto Flood Basin Tide Gate Structure, San Francisquito Creek (San Francisco Bay through Searsville Dam), Lower Penitencia Creek Improvements (Berryessa to Coyote Creek, Sunnyvale East and West Channels Improvement).

### C. SYNOPSIS OF THE DISTRICT'S CLIMATE CHANGE MITIGATION STRATEGIES

The District has adopted a wide array of strategies to mitigate for and adapt to climate change. Climate Change Mitigation entails doing our part to lessen the District's contributions to global warming by reducing its greenhouse gasses (hereinafter "GHG") emissions. The District's Board of Directors (hereinafter "Board") has recognized that climate change not only affects the District's ability to carry out its mission, but that District operations generate, avoid, reduce, and sequester greenhouse gasses. In recognizing our part as an energy user and thereby generator of GHG, we desire to do our part to reduce GHG.

The District's programs to achieve carbon neutrality include responding through water use efficiency and by developing alternative power sources. The District has implemented operational efficiency improvements such as the installation of variable frequency pump drives at treatment plants and pump stations, saving about 800 MWh annually. The District also utilizes a variety of incentives and rebates, one-on-one home visits with free installation of water-saving devices, workshops, and outreach at community events to promote water savings.

Additionally, we are the first water district in California to establish a binding climate divestment policy, which states, "No investments will be made in fossil fuel companies with significant carbon emissions potential." Other specific approaches that the District undertakes include: (1) an internal carbon reduction framework codified as a part of the ISO 9000/14001 Quality and Environmental Management System, (2) a comprehensive Water Conservation Program, (3) a habitat restoration, enhancements, and green business program to continue to expand the District's positive environmental impacts, (4) preserving, maintaining, restoring or enhancing wetlands and riparian habitats, which reduce the District's carbon footprint through carbon sequestration, and (5) a Climate Change Portal on our webpage to disseminate information to employees and educate the public.<sup>2</sup>

### D. SYNOPSIS OF THE DISTRICT'S CLIMATE CHANGE ADAPTATION RESPONSES

Climate Change Adaptation is the District's response to the effects of climate change in order to reduce the vulnerability of our core services. The District has a wide array of strategies to adapt to climate change. To ensure effective and coordinated management of these strategies, we implement a logical and consistent framework to provide dedicated resources that monitor the state of the science and evolving regulations, and to ensure they are considered in project and program planning across the District.

Specific adaptation strategies are intended to:

- (1) Manage water use demands (water use efficiency and conservation programs) and provide drought-proof supplies, such as more non-potable recycled water and developing potable water reuse in the future,
- (2) Increase system flexibility and optimize the use of existing water supplies and infrastructure, which leverages the investments the District already has made in water supply reliability,
- (3) Consider sea level rise and tidal influence in the District's flood protection projects, consistent with U.S. Army Corps of Engineers (hereinafter "USACE") and Federal Emergency Management Agency (hereinafter "FEMA") standards,

---

<sup>2</sup>[http://cf.valleywater.org/Water/Where\\_Your\\_Water\\_Comes\\_From/Water%20Supply%20and%20Infrastructure%20Planning/Climate%20Change/portal.cfm](http://cf.valleywater.org/Water/Where_Your_Water_Comes_From/Water%20Supply%20and%20Infrastructure%20Planning/Climate%20Change/portal.cfm)

and incorporate understanding of new hydrology and sea level rise into project management and planning,

- (4) Create environments that enhance and benefit streams and tidal settings, such as additional riparian planting and preservation of open space, and
- (5) Conduct riparian and tidal restoration or enhancements that provide benefits to wetlands habitats and species, conduct activities to address invasive species issues such as removing invasive plants to allow native lands to survive, and maintain freshwater and tidal wetlands and riparian habitat.

## II. EVOLUTION OF THE BOARD'S POLICIES ON CLIMATE CHANGE

Our Board has adopted general principles and a set of progressive policies to guide how the District conducts its business, which reflect our commitment to the environment, meeting the challenges of climate change, and reducing our carbon footprint. The policies are all available on our website.<sup>3</sup> The policies are under these defined categories:

- (1) Governance Process - Policies that specify how the Board conceives, carries out, and monitors its own task,
- (2) Board-BAO Linkage - Policies that define how power is delegated and its proper use monitored; for the Chief Executive Officer (CEO), District Counsel (DC), and Clerk of the Board (COB) roles, authority and accountability,
- (3) Ends - Policies that define who is to benefit from the organization, in what way, or at what cost,
- (4) Executive Limitations - Policies that constrain the BAO's authority in choosing the organizational means,
- (5) BAO Interpretations - The BAO's reasonable interpretations of strategies and outcome metrics for evaluating achieving the Board's Ends without exceeding set boundaries, and
- (6) Glossary – definitions of terms as used by the District throughout its policies.

Additionally, in January of 2008, the Board called a Special Board Meeting<sup>4</sup> on climate change where it formally recognized its threats and consequences, and thereby resolved to:

- (1) Exercise leadership in initiatives, programs, and policies that address climate change while furthering the District's mission;
- (2) Apply understanding of climate change and climate change impacts as appropriate in water supply plans, flood management project plans, asset management and infrastructure plans, California Environmental Quality Act

---

<sup>3</sup> <http://valleywater.org/About/BoardPolicies.aspx>

<sup>4</sup> [http://cf.valleywater.org/About\\_Us/Board\\_of\\_directors/Board\\_meetings/2008\\_Published\\_Meetings/MG31919/AS31929/AI32163/DO32174/DO\\_32174.pdfand 4/29](http://cf.valleywater.org/About_Us/Board_of_directors/Board_meetings/2008_Published_Meetings/MG31919/AS31929/AI32163/DO32174/DO_32174.pdfand 4/29)

assessments and environmental impact reports, energy management plans, business plans, and strategic plans; and

- (3) Strive to minimize the District's greenhouse gas emissions, work with the community to reduce its greenhouse gas emissions related to utilization and management of water resources and enhance community understanding of climate change and how it challenges the District's mission.

At the same meeting, staff recommended adoption of Governance Process policy 1.5, which the Board approved and adopted in April 2008<sup>5</sup>:

- 1.5 As an integral part of its comprehensive water, energy, and environmental management programs, the District will incorporate understanding of, preparation for, and adaptation to climate change, as well as apply a climate change mitigation prism to assess ongoing administrative and core business practices. In addition, so as not to exacerbate climate change, the District will strive to achieve carbon neutrality as soon as practicable and ensure reductions attributable to water conservation programs are credited to the Santa Clara County community.

Across the policy categories above are numerous strictures that shape and inform the District's work pertaining to climate change and environmental stewardship. As exhibited by the summary of our projects above, over the last 8 years the District's policies have resulted in numerous on-going endeavors to combat climate change.

A. GOVERNANCE PROCESS POLICY

1. The purpose of the Board, on behalf of the people of Santa Clara County, is to see to it that the District provides Silicon Valley safe, clean water for a healthy life, environment, and economy.
- 7.1. We are entrusted to serve the public and are responsible for carrying out the District mission for the benefit of the community.

B. ENDS POLICY

- 1.4. A net positive impact on the environment is important in support of the District mission and is reflected in all that we do.
- 3.1.1. Protect parcels from flooding by applying an integrated watershed management approach that balances environmental quality and protection from flooding.
- 3.1.2. Preserve flood conveyance capacity and structural integrity of stream banks, while minimizing impacts on the environment and protecting habitat values.
- 4.1.1. Preserve creeks, bay, and ecosystems through environmental stewardship.
- 4.1.3. Promote the protection of creeks, bay, and other aquatic ecosystems from the threats of pollution and degradation.
- 4.3.1. Reduce greenhouse gas emissions to achieve carbon neutrality by 2020.

---

<sup>5</sup>[http://cf.valleywater.org/About\\_Us/Board\\_of\\_directors/Board\\_meetings/2008\\_Published\\_Meetings/MG32754/AS32764/AI32860/DO32914/DO\\_32914.pdf](http://cf.valleywater.org/About_Us/Board_of_directors/Board_meetings/2008_Published_Meetings/MG32754/AS32764/AI32860/DO32914/DO_32914.pdf)

C. EXECUTIVE LIMITATION POLICY

4.9.3 No investments will be made in fossil fuel companies with significant carbon emissions potential.<sup>6</sup>

D. GLOSSARY OF POLICY TERMINOLOGY

**Climate change adaptation** - Actions taken by the District to reduce the vulnerability to the District's mission from actual or expected changes in climate and its impact on the natural environment, e.g., sea level rise.

**Climate change mitigation** - Actions taken by the District to reduce, eliminate, or offset greenhouse gas emissions from District operations.

**Environmental enhancement** - Action taken by the District that benefits the environment, is NOT mitigation, and is undertaken voluntarily. Enhancement actions may include environmental restoration, rehabilitation, preservation or creation. In instances where enhancements are located in the same vicinity as a mitigation project, actions must exceed required compliance to compensate for environmental impacts to be considered environmental enhancements.

**Mitigation** - Action taken by the District to fulfill CEQA/NEPA, permit requirements and court mandated mitigation to avoid, minimize, rectify or reduce adverse environmental impacts, or compensate for the impact(s) by replacing or providing substitute resources or environments.

**Natural flood protection** - A multiple-objective approach to providing environmental quality, community benefit and protection from creek flooding in a cost effective manner through integrated planning and management that considers the physical, hydrologic and ecologic functions and processes of streams within the community setting.

**Stewardship** - To entrust the careful and responsible management of the environment and natural resources to one's care for the benefit of the greater community.

III. RESPONSES TO SPECIFIC LITTLE HOOVER COMMISSION INQUIRIES TO THE DISTRICT

A. HISTORY AND OVERVIEW OF THE SANTA CLARA VALLEY WATER DISTRICT

The District was formed in 1929 as the Santa Clara Valley Water Conservation District, and it merged almost 50 years ago with the Santa Clara Valley Flood Control District. In 2001, the District Act was updated by SB 449 to certify that we provided comprehensive water management for all beneficial uses and protection from flooding within Santa Clara County and

---

<sup>6</sup> On August 27, 2013, the Board adopted Executive Limitation 4.9.3. As a result of this action, the District may not invest in the top 200 fossil fuel companies based on the list published by the non-profit organization 350.org, here <http://fossilfreeindexes.com/research/the-carbon-underground/>

As of September 2016, after the maturation of a Chevron bond, the District's investment portfolio is in full compliance with the Policy and has zero investments in fossil fuel companies.

that our purposes included the enhancement, protection, and restoration of natural resources, streams, and riparian corridors.

Today, the District manages an integrated water resources system that includes the provision of flood protection, the supply of clean, safe water, and the environmental stewardship of waterways on behalf of Santa Clara County's nearly 2 million residents. Regarding our operations, the District effectively administers 10 dams and surface water reservoirs, 3 water treatment plants, an advanced recycled water purification center, a state-of-the-art water quality laboratory, nearly 400 acres of groundwater recharge ponds, and 800 miles of creeks, streams, and rivers. Additionally, the District provides wholesale water and groundwater management services to local municipalities and private water retailers who deliver drinking water directly to homes and businesses in Santa Clara County.

About half of the county's water supply currently comes from local sources and about half comes from imported water sources. Imported water includes the District's State Water Project and Central Valley Project contract supplies and supplies delivered by the San Francisco Public Utilities Commission (hereinafter "SFPUC") to cities in northern Santa Clara County. Local sources include natural groundwater recharge and surface water supplies, including surface water rights held by the District, San Jose Water Company, and Stanford University. A small but growing portion of the County's water supply is recycled water. The District water supplies are either: used to recharge the local groundwater sub-basins, treated at drinking water treatment plants, released to local creeks to meet environmental needs, or sent directly to water users. The District is in the process of developing a potable reuse program, which will purify recycled water and use the water for groundwater recharge. In addition, the county's demands for water would be about 15% higher if not for District and retailer investments in long-term water conservation savings.

Since FY 09, our Water Utility retained earnings reserved have not exceeded \$20 million. To be certain, and as discussed below, the 1% ad valorem property taxes that we receive from Santa Clara County are almost exclusively allocated to the non-enterprise functions of the District's operations, like capital investments in and management of our watersheds. In FY 15, we received approximately 2% of Santa Clara County's receipts from the 1% ad valorem property tax, which funded 22% of the District's operations. Since the Little Hoover Commission (hereinafter "LHC") report on special Districts in 2000, our cash and investments have ranged between \$400 - \$600 million, on operating revenues between \$210 and \$375 million. As of FY 15, the District has approximately \$565 million in cash and investments, of which \$160 million is allocated to projects by our water utility services, \$38 million is allocated to our general and internal service fund, and \$367 million is allocated to projects for watershed/stream stewardship and flood protection. \$213 million of this was garnered from voter-approved special parcel tax measures in 2000 for the Clean, Safe Creeks program, and renewed by 74% of voter approval for Measure B in 2012.<sup>7</sup>

Additionally, for unanticipated and unforeseen expenses, The District has reserves that can be utilized. Our main Funds (i.e. Water Utility, Watershed Stream Stewardship, and General Fund) have an "Operating and Capital reserve", in which the FY 17 budget totals \$75 million. (The \$75 million excludes Safe Clean Water because it is a defined program whose money could not be used in an emergency). Also, the District's Risk Management fund has a Property Self Insurance/Catastrophic Reserve, in which the FY 17 budget totals \$6.1 million. That reserve could be tapped for a flood emergency to initiate recovery in advance of FEMA activation and

---

<sup>7</sup> <http://www.smartvoter.org/2012/11/06/ca/scl/meas/B/>

reimbursement. The Water Utility also has a supplemental water supply reserve of \$14.3 million for FY 17 that could also be used for a water supply related emergency.

B. THE DISTRICT'S OPERATIONS & ROLE WITHIN THE BAY AREA METROPOLITAN LANDSCAPE

There are over 300 Bay Area organizations whose work pertains to water.<sup>8</sup> The District is partners in multiple regional efforts related to water supply and flood protection, including:

Bay Area Regional Reliability Program – The District is one of eight partners working on the Bay Area Regional Reliability Program (hereinafter “BARR”). Currently, BARR is developing a Drought Contingency Plan that will identify regional mitigation and response actions for addressing droughts and other water shortages. BARR also is coordinating its planning efforts with the Association of Bay Area Governments (hereinafter “ABAG”).

Bay Area Integrated Regional Water Management – The District was instrumental in forming the Bay Area Integrated Regional Water Management Coordinating Committee, which developed the Bay Area Integrated Regional Water Management Plan (hereinafter “IRWM Plan”). The IRWM Plan describes the Bay Area’s water and water-related resources, objectives related to those resources, projects and programs to achieve the objectives, and considerations for climate change mitigation and adaptation on a regional scale.

Bay Area Water Agencies Coalition – The District is one of ten water supply agencies that participate in the Bay Area Water Agencies Coalition, which regularly meets to discuss and collaborate on common water supply challenges and issues, including droughts and climate change.

The District also coordinates activities related to its State Water Project deliveries with other contractors that rely on the South Bay Aqueduct, specifically Zone 7 Water Agency and Alameda County Water District. The District coordinates activities related to its Central Valley Project deliveries with San Benito County Water District, another contractor in the San Felipe Division of the project. The District is also considering whether to partner with Contra Costa Water District, another CVP contractor, on expanding Los Vaqueros Reservoir.

Moreover, the District is partners with local, state, and federal agencies on several projects along the San Francisco Bay shoreline to improve flood resilience, habitat, and various ecosystem functions. The South San Francisco Bay Shoreline Study and Project is discussed below in section III.E.

Finally, the District’s Climate Change Action and Adaptation Plan is scheduled for completion in 2019. This project will be the foundation for our efforts going forward into the 21<sup>st</sup> century. The plan will be comprehensive and will help to ensure inclusion of stakeholders and partners, as well as provide a framework for coordination in regional planning efforts. The goals of this project are to build upon the District’s climate change knowledge and understanding, as discussed in detail below, to inform planning efforts in the District’s core business areas relative to the effects of climate change, to identify new and document existing adaptation strategies, and to identify opportunities for improvement in Greenhouse Gas mitigation efforts. This project is an ongoing effort that is projected to cost roughly \$200K per year adjusted for inflation in to the future.

---

<sup>8</sup> <http://bairwmp.org/organizations>

## **C. CHALLENGES DUE TO CLIMATE CHANGE**

### **C.1. FLOOD PROTECTION CHALLENGES DUE TO CLIMATE CHANGE**

Despite decades of effort to provide flood protection, about 40,000 acres of developed land remain subject to flooding from a one percent flood event in Santa Clara County. However, through Measure B in 2012, a stable funding source for flood protection projects has been established through 2028, and several large, multi-year, capital construction projects are anticipated to be completed by then. While, this will reduce the area subject to flooding, it does not eliminate it.

Moreover, climate change will affect the level of flood risk. Flood protection projects are designed based on statistical analysis of past events, and built to provide protection to a certain level—often the one percent flood. With climate change, the future is likely to be very different from the past, with most models projecting more intense, but possibly less frequent, rainstorms. Combined with projected sea-level rise, this calls for a new approach in planning for future flood protection measures. Previously-built projects may not provide protection if hydrologic conditions no longer match design assumptions.

In light of sea level rise, flood protection structures must be designed with resiliency and flexibility in mind, as they will need to be adaptable to make them resilient. District staff consider future sea level rise in determining water surface boundary conditions in the planning and design of our projects. We also consider natural infrastructure to provide a flood protection system that can evolve in the future. Yet, given the mounting regulatory hurdles discussed below in Section III.L, responding to these dangers is multi-faceted.

### **C.2. WATER SUPPLY CHALLENGES DUE TO CLIMATE CHANGE**

To address the challenges of an uncertain future, imprecise projections of future conditions, and potential impacts on water supplies, the District relies on its long term planning efforts that continually develop and improve resilient and adaptable water supplies and strategies to consider changing conditions.

The District is updating its 2012 Water Supply and Infrastructure Master Plan (hereinafter “Water Master Plan”) in 2017. The plan is reviewed annually and updated every five years to evolve to changing conditions. The 2017 update will build upon the Board approved strategies to secure and optimize the use of existing supplies and infrastructure and meet future increases in demands with conservation and recycling. The Water Master Plan will continue to develop elements that adapt well to future climate changes. The current elements are presented below.

- a. Manage water use demands – Current and planned water conservation programs are projected to achieve about 99,000 acre-feet per year (hereinafter “AFY”) of water savings per year by 2030, when demands are projected to be about 400,000 AFY. A new initiative is to work with land use agencies and water retailers to develop a model water efficient development ordinance. More efficient water use in existing and new developments will help manage change in demands due to climate change.
- b. Provide drought-proof supplies – Non-potable recycled water use is projected to expand from about 22,000 AFY in 2014 to over 30,000 AFY by 2035. The District is also setting the stage for developing potable reuse, which is anticipated to provide at least 20,000 AFY of drought-proof supply for groundwater recharge and/or injection.

- c. Secure imported water supplies – About 40 percent of the county’s water supply is conveyed through the Sacramento-San Joaquin Delta. Reduced precipitation and sea level rise are significant threats to the reliability of these supplies and the Delta ecosystem. The District is working with local, state, and federal agencies to develop solutions to address climate change and other threats to the Delta environment and water supply reliability.
- d. Increase system flexibility – The District’s integrated water system provides significant flexibility in managing supplies. Maintaining and rehabilitating the system, including dam retrofits, will be critical for managing the increased frequency of extreme events that are anticipated in a changing climate. In addition, the Water Master Plan includes developing a new reservoir pipeline and additional groundwater recharge ponds to better utilize existing water supplies, especially during high storm flows and wet years. Future strategies may include additional surface and/or groundwater storage.
- e. Compile and analyze data that could provide insights into potential local changes in runoff, water quality, and water use demands.

### **C.3. ECOSYSTEM RESILIENCY TO COMBAT CLIMATE CHANGE**

The District has multiple restoration and enhancement projects that strive to improve vegetative communities for local wildlife and native plant diversity, increase native canopy cover and carbon dioxide (CO<sub>2</sub>) sequestration to reduce climate change effects, increase in-stream shading to lower water temperatures for fish, and enhance habitat connectivity for wildlife migration. These projects utilize adaptive management strategies to more readily address changing climatic conditions in the future.

- a. Current projects that support ecosystem resiliency include the South Bay Salt Pond Restoration Project which will minimize bayfront impacts from sea level rise by providing a wetland buffer and attenuation of high tides.
- b. The South San Francisco Bay Shoreline Study will not only enhance flood protection for our bayfront communities but also provide improved ecotones and habitat connectivity for wildlife. The Study and Project are discussed in full length in section III.E.
- c. The District awarded the San Francisco Bay Bird Observatory a grant of \$690,000 to plant native vegetation on the South Bay Salt Pond levee slopes to enhance wildlife habitat connectivity and reduce wave damage.
- d. The District’s water conservation program provides rebates to homeowners and businesses for converting high water use landscapes to climate appropriate plants and permeable landscapes.
- e. The District recently completed all required land preservation for its Stream and Watershed Preservation Program (Program). Over 3,600 acres of upper watershed lands in various parts of Santa Clara County have been protected as a part of the Program. Ongoing monitoring and land management activities continue to ensure that the conservation values of the preserved land are maintained.

#### **C.4. COMPOUND THREATS TO SERVICES – SEISMICALLY ACTIVE REGION**

On the subjects of our vulnerabilities and exposure, while not directly related to climate change but pertaining to the confluence of challenges posed by the drought, climate change, and other regional stressors, it is worth noting the District's operations are in a highly seismic area, and that earthquakes pose a very real threat to diminishing our water supply capacity, disrupting our services, and severely damaging our infrastructure.

For example, an engineering firm performing seismic evaluation tests of Anderson Dam required by federal regulators in 2009 found that the dam's foundation contains sand and gravel, which could shift in a major earthquake.

Anderson Dam creates the county's largest surface water reservoir, Anderson Reservoir, which stores local rainfall runoff and imported water from the Central Valley Project. As the county's largest reservoir, Anderson is a critical water source for our treatment plants and for recharging the groundwater basin. Yet, when Anderson Dam was built nearby the Calaveras fault in 1950, the dam was thought to be anchored in bedrock, and scientists' understanding of the seismic behavior of dams was far less evolved compared to what is known today.

Subsequent to receiving the engineering firm's seismic evaluation results, the District released the studies showing that a breach of Anderson Dam at full capacity could have catastrophic consequences, including inundation by water of surrounding land more than 30 miles northwest to San Francisco Bay and more than 40 miles southeast to Monterey Bay.

Consequently, officials from the Federal Energy Regulatory Commission and the California Division of Safety of Dams approved limiting Anderson Reservoir to 68 percent of its capacity, as an interim risk reduction measure due to dam failure during a major earthquake. Moreover, they requested the District retrofit the dam as soon as possible, a project that had been estimated to cost \$193 million, but is currently being revised upward, based on additional retrofit work required due to new findings during the project design process. More information is available on our webpage.<sup>9</sup>

#### **D. HISTORIC FLOODING THREATS AND ANTICIPATED CHANGES DUE TO CLIMATE CHANGE**

Historically, periodic flooding sustained the abundant ecosystems of the Santa Clara Valley and helped to create rich agricultural lands. The Diablo and Santa Cruz ranges catch rainfall and direct it to steep streams that transition to a much flatter valley floor. This abrupt shift onto the plain was partially responsible for historically frequent, shallow, and widespread flooding, which deposited the soil eroded from the adjacent ranges over many centuries.

Continuing development of roads, homes, and pavement around Santa Clara County has decreased the amount of land able to absorb rainfall and increased the need for speedy drainage of the area. The water running off these surfaces is concentrated into storm drains and discharged into creeks, where the intense flow can erode banks and undercut trees, roads, and other creek-side structures, including the levees intended to contain the water.

Eroded soil from creek banks ultimately settles downstream, reducing a creek's conveyance capacity and increasing the likelihood of overbanking and the need for continual sediment

---

<sup>9</sup>[http://www.valleywater.org/uploadedFiles/Services/CleanReliableWater/WhereDoesYourWaterComeFrom/Reservoirs/Anderson\\_Dam/Anderson%20Dam%20FAQ%20Sheet\\_03\\_11\\_15\\_Web\(1\).pdf?n=2749](http://www.valleywater.org/uploadedFiles/Services/CleanReliableWater/WhereDoesYourWaterComeFrom/Reservoirs/Anderson_Dam/Anderson%20Dam%20FAQ%20Sheet_03_11_15_Web(1).pdf?n=2749)

maintenance. Even as flood protection efforts have expanded over the past 65 years, flooding has never been totally eliminated: since 1950, seventeen years witnessed significant flooding from one or more of the valley's rivers.

Increasingly, water managers have recognized that large, heavily engineered, river modification projects lack the resilience of natural river systems. The use of concrete on a large scale eliminated creek corridor habitats and the associated ecosystem services. In response, the District now embraces a multi-objective approach it calls natural flood protection (hereinafter "NFP").

NFP aims to balance property protection with natural resource preservation, community benefits, and the costs of building and maintaining projects over the long term. For instance, in designing the Guadalupe River Project through downtown San Jose, the District aimed to protect more than 7,000 properties from a 1% risk of flooding, while also improving the river's ecology, hydrology, fisheries, and habitat.

In partnership with the USACE for the Guadalupe River Project, the District widened and planted extensively in the floodplain and upland areas to decrease erosion and increase habitat space. Upriver, the District is working to stabilize the channel and expand habitat for steelhead trout and other native fish.

The District has targeted projects that will reduce flood damages to the valley as a whole, especially the urban core. With most of the economically feasible projects expected to be completed by 2029, the District now works continuously to maintain the valley creeks. This includes removing sediment, restoring eroded banks, inspecting levees, and managing vegetation, so that waterways continue to effectively carry floodwaters and serve as fish habitat.

Other District activities to reduce flood risks include: education and outreach, flood warning programs, and ordinances or codes to manage development in floodplains. Local land use agencies play a critical role in these "nonstructural" activities to keep people and property safe in flood prone areas, as discussed further in III.H.

Finally, the District maintains historic flood reports online.<sup>10</sup>

#### E. THE SOUTH SAN FRANCISCO BAY SHORELINE STUDY AND PROJECT

Santa Clara County's shoreline is at great risk from flooding due to extreme storm events and future sea level rise exacerbated with high tides. The science dealing with sea level rise has rapidly developed over the past few years as scientists have produced numerous studies.

The South San Francisco Bay Shoreline Study (hereinafter "Shoreline Study") is the first step of the South San Francisco Bay Shoreline Project, a major flood protection project which will consist of the construction of 4 miles of engineered levees, the restoration of 2,900 acres of tidal marsh habitat, and the flood protection for a population of 5,500. When completed, the FEMA-accredited levees also will protect the region from up to 3 feet of sea-level rise for the next 50 years.

The Study is congressionally authorized for the USACE to identify and recommend flood protection and ecosystem restoration projects in the South San Francisco Bay for Federal

---

<sup>10</sup> Detailed Santa Clara flood reports with images and aerial surveys extending back fifty years to 1967 are available here: <http://www.valleywater.org/Services/FloodReports.aspx>



and wetlands. Using natural infrastructure will provide increased flood protection and restored Bay habitats, as well as a flood protection system that can evolve in the future.

To that end, the first feasibility study for EIA 11 identified and recommended flood protection projects that meet the following goals:

- (1) Protect low-lying areas of San Jose and Alviso from flooding by a flood event that has a 1% probability of occurring in any given year by constructing 4 miles of FEMA certifiable levees,
- (2) Protect the area from just over 2 feet of sea level rise,
- (3) Protect urban areas next to north San Jose and Alviso from tidal flooding, including the San Jose-Santa Clara Regional Wastewater Facility and the Silicon Valley Advanced Water Purification Center, which receives water from the Wastewater Facility,
- (4) Restore up to 3.5 square miles of tidal marsh habitat,
- (5) Contribute to creation of the West Coast's largest restored wetland with extensive habitat for endangered species, fish, & migratory birds,
- (6) Provide enhanced public trails & recreation opportunities, and
- (7) Provide trail connectivity to the regional Bay Trail system.

#### F. SHORELINE STUDY AND PROJECT COSTS & TIMELINE

The Shoreline Study is funded by a partnership between the USACE, the Santa Clara Valley Water District, and the California State Coastal Conservancy. It is estimated to cost \$174 million and will result in the construction of 4 miles of engineered levees, restoration of 2,900 acres of tidal marsh habitat, flood protection for a population of 5,500, and protect the region from up to 3 feet of sea-level rise for the next 50 years.

Measure B will provide \$15 million of the District's cost share for design and partial construction of EIA 11 and \$5 million for planning of the remaining Economic Impact Areas 1-10 in Santa Clara County. Additionally, Measure AA, the "Clean and Healthy Bay" parcel tax, which Bay Area voters approved in 2016, authorizes a \$12 per year parcel tax with revenue earmarked for the restoration of wetlands surrounding the San Francisco Bay and will provide Santa Clara County at least \$60 million towards shoreline related projects and restoration efforts.<sup>12</sup>

In December 2014, the EIA 11 draft Feasibility Integrated Document and Environmental Impact Statement/Report was released to the public and the release was followed by a public comment period and a public meeting. The final report was released in September 2015, shortly followed by a successful USACE Civil Works Review Board in October. In December 2015, the USACE Chief of Engineers recommended that Congress authorize the Shoreline Study to proceed with pre-engineering and design. The project is now awaiting Congressional approval of the Water Resources Development Act of 2016 before construction can commence, possibly as soon as 2018, once detailed design and the permitting process is complete. Construction of the EIA 11 project is anticipated to occur over 3 years, beginning early 2018 to late 2020.

---

<sup>12</sup>[https://ballotpedia.org/San\\_Francisco\\_Bay\\_Restoration\\_Authority\\_%E2%80%99Clean\\_and\\_Healthy\\_Bay%E2%80%9D\\_Parcel\\_Tax,\\_Measure\\_AA\\_\(June\\_2016\)](https://ballotpedia.org/San_Francisco_Bay_Restoration_Authority_%E2%80%99Clean_and_Healthy_Bay%E2%80%9D_Parcel_Tax,_Measure_AA_(June_2016))

The U.S. Fish and Wildlife Service (hereinafter “USFWS”) and local agencies are also closely involved with the Shoreline Study as key adjacent landowners. The Shoreline Study also coordinates closely with the South Bay Salt Pond Restoration Project. The California State Coastal Conservancy and the USFWS jointly manage the project with participation from the Santa Clara Valley Water District. Extensive coordination has occurred, and will continue to occur, between the two projects.

The total authorized locally preferred project cost for the flood risk management structures, ecosystem restoration, and recreation for EIA 11 is projected to be \$174 million. The total non-Federal partners share of this cost will be \$103.8 million with \$42.4 million for the levee and related structures, \$58.2 million for the ecosystem restoration, and \$3.2 million for recreation. To note, part of the value of the salt ponds lands, paid for with state funds, will count towards the non-Federal portion as well. And, as previously mentioned, Santa Clara County voters have already approved \$15 million for implementing the Shoreline Project in EIA 11, as well as a portion of the \$60 million from Measure AA, the 9-county parcel tax measure, will be sought to further fund the non-Federal partners share of the project cost.

Prior to starting the next phase of the Shoreline Study in EIAs 1-10, the Santa Clara Valley Water District is analyzing the existing conditions along Palo Alto, Mountain View, and Sunnyvale’s shorelines where expected flood-related damages are estimated to be high. The District will complete the preliminary Feasibility Study in December of 2016. The District’s preliminary feasibility efforts will identify a preliminary levee alignment through early discussion with key stakeholders to determine the next phase or phases of the project to move forward with the USACE.

#### **G. INFRASTRUCTURE FINANCING: PROPERTY TAXES, FEES, AND RESERVES**

Like most of the state’s water infrastructure, Santa Clara County’s flood infrastructure is aging: nearly half of its flood protection projects are over 40 years old. With most projects originally planned for a 50-year life, many will need to be rehabilitated or replaced in the near future. While this is a major budgetary concern, it is an opportunity to replace old concrete or barren earth channels with more resilient, environmentally integrated landscapes. Existing structures also will need to be re-evaluated in the face of climate change. Projects have been designed based on statistical analyses of past events. Climate change models suggest that our future may look very different from the past: storms are likely to be more intense and less predictable, and sea level rise brings a new level of risk to bayside areas. Combined, these changes necessitate a vigorous analysis of old projects’ adequacy and a new approach to planning in which resiliency and flexibility are highly valued.

The District hosts our historical Comprehensive Annual Financial Reports online.<sup>13</sup> To briefly summarize the information contained within these expansive documents, there are 3 main funding sources that pay for the services provided by the District: (1) the Water Utility fund pays for the District’s water utility services. The primary revenue source for the Water Utility is groundwater and treated water charges. The Water Utility pays for 50% of the Climate Change Adaptation and Mitigation Framework project, (2) the Watershed Stream Stewardship fund pays for the District’s flood protection operations activities and some flood protection capital projects, and its primary revenue source is the 1% ad valorem property taxes (\$63 million received in FY 14-15). The Watershed Stream Stewardship fund pays for the other 50% of the Climate Change Adaptation and Mitigation Framework project, and (3) The Safe, Clean Water fund, from the voter approved special parcel tax measure (\$39 million received in FY 14-15), covers a 15-year

---

<sup>13</sup> <http://valleywater.org/About/CAFR.aspx>

program comprised of flood protection capital projects, water supply protection projects, and wildlife habitat and open space restoration projects. The Safe, Clean Water fund also will pay for future costs associated with the San Francisco Bay Shoreline project (approximately \$30 million).

As of FY 15 the District has approximately \$565 million in cash and investments, of which \$160 million is allocated to projects by our water utility services, \$38 million is allocated to our general and internal service fund, and \$367 million is allocated to projects for watershed/stream stewardship and flood protection. \$213 million of that was garnered from voter-approved special parcel tax measures in 2000 for the Clean, Safe Creeks program, which were renewed by voter approval of Measure B in 2012. Reserve levels in the Watershed Stream Stewardship fund and Safe Clean Water Fund are higher than anticipated primarily due to the delays beginning planned flood protection capital projects to which the monies are allocated, because of difficulties in obtaining the associated permits. The Watershed Stream Stewardship fund does not have debt financing capability. The Safe Clean Water fund does have debt financing capability, which may need to be executed once flood protection project spending ramps up and the current cash reserve level is drawn down.

#### H. CHALLENGES AND BARRIERS TO RESOURCES FOR COMBATING CLIMATE CHANGE

For our water supply operations, one area that is a challenge to us and many water agencies is that we are not a land use agency. Since future land use planning has a direct impact on future water supply demand for the county, coordinating work on this issue is imperative. We increased our coordination in demand assumptions and understanding in our 2015 Urban Water Management Plan process by interviewing water retailers and land use planners and by reviewing general plans and housing elements. We also are participating in a multi-agency task force to develop a Model Ordinance for cities and the County to adopt that raises the bar on water use efficiency requirements for new developments.

With regard to our activities pertaining to flood control, there are a bevy of regulatory issues discussed below in III.L. Beyond these administrative and political challenges, we benefit from wide public support from the residents in Santa Clara County for the functions we perform and services we provide. In 2000, the voters of Santa Clara County supported a ballot measure entitled the “Clean, Safe Creeks and Natural Flood Protection Plan,” which in 2012 the residents approved and renewed through Measure B with 74% voter approval, which also updated the program’s name to the “Safe, Clean Water & Natural Flood Protection Program.” Additionally in 2016, Measure AA passed with 70% voter approval from the nine counties surrounding the Bay Area, and it will invest \$500 million over 20 years to enhance the Bay and protect the shoreline for future generations through a \$12 parcel tax.

#### I. COMMUNITY ENGAGEMENT AND DIGITAL RESOURCES

The District frequently appears at many community events and festivals throughout Santa Clara County to perform outreach and promote the District’s efforts. These events draw tens of thousands of people and provide the District with the opportunity to educate and engage our diverse community on priority District issues, initiatives, and programs. District participation at these events also allows the District to update event attendees about specific projects and upcoming events in those communities.

Additionally, the District’s Water Resources Education Outreach Program provides a hands-on learning experience to pre-school through high school students on the human impact to the environment and on our local water ways. The program is aligned with California’s Common

Core State Standards, and it raises student awareness of their actions and solutions in the form of watershed stewardship.

Further, the District's staff has been given direction by our Board, and management, to increase water supply planning coordination activities with local land use agencies and the ABAG. We also will be working at increasing coordination in long term water supply planning, through BARR and in our upcoming Climate Change Action and Adaptation Plan.

Beyond our engagement around Santa Clara, the District has the aforementioned "Climate Change Portal" on its website which contains an abundant amount of information about climate change and how the District incorporates this information into its planning and operations.<sup>14</sup> Moreover, we have a robust repository of meeting materials and informational resources online pertaining to climate change, including the Board's discussions and District presentations to the public on climate change.<sup>15</sup>

The District also has a social media presence on Facebook, Twitter, Instagram, and NextDoor. Additionally, over the summer, the District launched a news webpage, ValleyWaterNews.org with contemporaneous articles and stories about the District's activities throughout Santa Clara and the South Bay Area. Finally, the District transmits a monthly newsletter to approximately 20,000 residents compiling stories from across the District.

#### J. REGIONAL SOLUTIONS TO ADDRESS FLOODING AND SEA LEVEL RISE IN SOUTH BAY

As mentioned previously, the District partners with local, state, and federal agencies on several projects along the San Francisco Bay shoreline to improve flood resilience, habitat, and various ecosystem functions. Additionally, the District engages in multiple regional efforts, including:

- Bay Area Integrated Regional Water Management Coordinating Committee – This group developed the IRWM Plan, which describes the Bay Area's water and water-related resources, objectives related to those resources, projects and programs to achieve the objectives, and considerations for climate change mitigation and adaptation on a regional scale.
- Bay Area Flood Protection Agencies Association – The District also participates in the Bay Area Flood Protection Agencies Association, which regularly meets to discuss and collaborate on common flood protection challenges and issues, including sea level rise.
- Bay Area Water Agencies Coalition – The District is one of ten water supply agencies that participate in the Bay Area Water Agencies Coalition, which meets regularly to discuss and collaborate on common water supply challenges and issues, including droughts and climate change.
- Coastal Hazards Adaptation Resiliency Group – The District participates in this regional group that is comprised of federal (FEMA, USACE), state (Department of Water Resources, California State Coastal Conservancy, San Francisco Bay Conservation and Development Commission), and local cities, counties, and water districts in the Bay Area. The purpose of this group is to coordinate solutions related to coastal hazards

---

<sup>14</sup>[http://cf.valleywater.org/Water/Where\\_Your\\_Water\\_Comes\\_From/Water%20Supply%20and%20Infrastructure%20Planning/Climate%20Change/portal.cfm](http://cf.valleywater.org/Water/Where_Your_Water_Comes_From/Water%20Supply%20and%20Infrastructure%20Planning/Climate%20Change/portal.cfm)

<sup>15</sup>[http://www.valleywater.org/Water/Where\\_Your\\_Water\\_Comes\\_From/Water%20Supply%20and%20Infrastructure%20Planning/Climate%20Change/SCVWD-board-and-pres.cfm](http://www.valleywater.org/Water/Where_Your_Water_Comes_From/Water%20Supply%20and%20Infrastructure%20Planning/Climate%20Change/SCVWD-board-and-pres.cfm)

along the San Francisco Bay. The water district participates in the Steering Committee and Technical Advisory Committee.

- Joint Venture Silicon Valley's Sea Level Rise Planning Assumptions & Activities Working Group – The District participates in this regional group that is comprised of Joint Venture Silicon Valley, USFWS, California Coastal Conservancy, County of Santa Clara, City of Milpitas, City of Mountain View, City of Palo Alto, City of Sunnyvale, and the water district. The purpose of this group is to coordinate activities and improve knowledge about sea level rise.
- Advanced Quantitative Precipitation Information Project – The District is a partnering agency with Sonoma County Water Agency, SFPUC, the Bay Area Flood Protection Agencies Association, California Department of Water Resources, and National Oceanic and Atmospheric Administration. The main purpose of the project is to install five X-band weather radars in the Bay Area to improve rainfall forecast ability to reduce flood risks.
- San Francisco Bay Resiliency by Design – The District is a managing partner with San Francisco Estuary Institute, City of San Francisco, Metropolitan Transportation Commission, San Francisco Bay Conservation and Development Commission, and ABAG to develop a background technical description of the Bay Area with respect to climate change and sea level rise that can be used to support resilient and sustainable design.
- Bay Area Clean Water Agencies – The District is an associate member of the Bay Area Clean Water Agencies, an organization of wastewater treatment and recycled water agencies. Our participation is consistent with our policies to expand recycled water use for water supply reliability, especially in light of increased droughts associated with climate change.
- National Association of Flood and Stormwater Management Agencies – The District is a member of this national organization. Interim Chief Executive Officer, Norma Camacho, is on the Board of Directors, and Melanie Richardson, Interim Chief Operating Officer of Watersheds, is Co-Chair of the Flood Management Committee.
- Association of California Water Agencies – Finally, the District is an active member in the Association of California Water Agencies (hereinafter "ACWA"), with the District's State staff in the Office of Government Relations actively engaged in Region 5 meetings and ACWA's State Legislative Committee. Moreover, District staff from several other units are engaged in substantive ACWA-convened legislative and regulatory meetings, summits, and conferences.

K. ENHANCING REGIONAL PARTNERSHIPS TO FORTIFY OUR RESPONSE TO CLIMATE CHANGE

In 2015, a Santa Clara County Grand Jury report was released entitled, "A Slow Moving Emergency – Sea Level Rise," in which the District was referenced in its findings and recommendations, regarding improving coordination and information sharing across the county on sea level rise. The District responded in full to the Grand Jury Report, which in the interest of

space and time, may be viewed online at the District's webpage, along with the grand jury's findings and recommendations to which we were responding.<sup>16</sup>

In pertinent part, the Grand Jury recommended the District (1) take a more proactive role in coordinating with cities that will be affected by sea level rise by unifying, integrating and directing efforts in Santa Clara County, and (2) coordinate Santa Clara County's efforts to address Sea Level Rise for all of the cities in Santa Clara County that abut the Bay.

In response, the District (1) confirmed and certified its existing regional coordination work, including that efforts between the District and cities already occur through two channels: (a) CHARG (Coastal Hazards Adaptation Resiliency Group), a stakeholder work group founded by the USACE, FEMA, California Department of Water Resources, the District, and a number of water districts around the San Francisco Bay, and (b) CRS (Community Rating System), led by the District and comprised of city and county floodplain managers who meet quarterly to discuss flood risk reduction actions in the County, and (2) committed to work with the cities that abut the Bay to develop a coordination program that (a) develops sea-level-rise flood maps for each city abutting the Bay to facilitate risk communication, (b) communicates sea level rise information with elected officials through the Water Commission, and (c) communicates sea level rise information with city managers through the Santa Clara County City Manager's Association.

#### L. OUR NEEDS FROM THE STATE FOR FUNDING, LEGISLATION, AND REGULATORY ACTION

There are numerous areas where we may broaden our adaptation to climate change, if administrative, legislative, and financial resources are provided. Aside from the numerous permitting issues discussed below, the District is participating in efforts by the State Water Resources Control Board to evaluate the feasibility of developing regulations for recycled water that is intended for *direct* potable reuse. The District currently operates our aforementioned advanced recycled water purification center. The State Water Board's draft report last month concluded that developing such regulations is feasible.<sup>17</sup> The State thus should expedite the development of the regulations so agencies can initiate capital planning projects that supply direct potable reuse water, as a drought-resistant source of supply. Concurrently and equally as important, the State and water agencies throughout should initiate public education campaigns in their communities for the lead up to finalizing the direct potable reuse regulations, as it is well known in the water community that the Orange County Water District engaged in a twenty-year campaign to educate the public before it finally had the support to operate its advanced water purification system for *indirect* potable reuse.

Moving on, the current permitting processes and requirements are wrought with problems which in effect delay and hinder critical projects that are responsive to climate change. Still, there are common sense solutions available to be forged through inter-permitting agency coordination and communication to improve upon the processes to minimize friction caused by multiple authorities' differing requirements for submissions.

##### L.1. IMPROVE PERMITTING PROCESS EFFICIENCY FOR ANTICIPATED MAINTENANCE ACTIVITIES

For a typical flood protection project, a flood protection agency develops a design and obtains regulatory permits to construct it. Some years after construction the flood protection facility needs maintenance and a flood protection agency must seek another permit to perform these

<sup>16</sup>[http://cf.valleywater.org/About\\_Us/Board\\_of\\_directors/Board\\_meetings/\\_2015\\_Published\\_Meetings/MG58354/AS58370/AI58613/DO58634/DO\\_58634.pdf](http://cf.valleywater.org/About_Us/Board_of_directors/Board_meetings/_2015_Published_Meetings/MG58354/AS58370/AI58613/DO58634/DO_58634.pdf) at page 35-37.

<sup>17</sup>[http://www.waterboards.ca.gov/drinking\\_water/certlic/drinkingwater/documents/rw\\_dpr\\_criteria/draft\\_report\\_to\\_legislature\\_dpr\\_public\\_review.pdf](http://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/documents/rw_dpr_criteria/draft_report_to_legislature_dpr_public_review.pdf)

maintenance activities. Each subsequent maintenance activity during the life of the flood protection facility requires an additional permit.

It would be more efficient and result in a more effective program if the regulatory agency and flood protection agencies could agree on a project design and maintenance schedule and protocols that would allow construction and subsequent maintenance without further permits. This could be achieved through agreement on a Maintenance and Monitoring Plan during the design phase of the flood protection project.

The project would be designed with maintenance activities in mind, so when the maintenance activities are performed there is minimal impact to the environment. For example, the project could be oversized with habitat value so the baseline habitat requirement can be maintained when maintenance activities are performed. The Maintenance and Monitoring Plan would include protocols of accepted maintenance practices and activities that could be performed after project construction without an additional permit. The Plan would also allow for adaptive management through the life of the project. Monitoring would be performed as specified in the Plan and would inform a project management team, formed by a flood protection agency, natural resource agencies, and other stakeholders, of any necessary adaptations to habitat, hydrology, hydraulics, or other changes that occur over time. Any necessary changes to the maintenance protocols would be agreed to by the project management team.

Thus we request inquiry into establishing new permit processes which entail approval of project construction concurrently with routine project maintenance without further permits.

## L.2. IMPROVE PERMITTING FOR ROUTINE CHANNEL MAINTENANCE

Improvements to the permitting processes specifically for routine channel maintenance are needed to manage flood protection channels to meet both habitat and flood protection goals, which often compete and sometimes conflict. The balanced co-existence of the multi-use functions requires routine maintenance to manage vegetation, sediment, and debris to maintain adequate channel capacity. Balancing habitat and flood protection goals encourages flood protection agencies to create or restore more habitat and wildlife corridors in flood protection channels and provides for a more resilient and sustainable flood protection system.

However, increasingly, local flood protection agencies are reluctant to create or restore habitat and wildlife corridors in flood protection channels due to the difficulty in obtaining natural resource agency permits to perform routine maintenance, including vegetation management. Prolonged regulatory permitting processes have delayed the necessary authorizations required to perform routine channel maintenance. As a result, balanced multi-use channels are turning into single purpose vegetation-choked corridors. The inability to maintain flood channels has resulted in increased risk of flooding and undermined the public safety mission of flood protection agencies. Moreover, the lack of timely permits can significantly increase loss of life, public health problems, property damages and liability for flood protection agencies. At a minimum, we are confident that the competing needs of flood safety and habitat can co-exist with routine maintenance, if timely and predictable permits are issued so that that flood protection agencies can reliably plan and implement multi-use flood protection channels.

Furthermore, compliance with existing permitting requirements has dramatically increased compensatory mitigation costs. Increased mitigation costs are a disincentive for creating or restoring habitat in channels resulting in flood protection agencies rethinking the benefit of multi-use channels. A means of balancing flood protection and habitat functions needs to be

developed jointly with flood protection agencies and natural resource agencies to encourage multi-use flood channel planning.

### L.3. IMPROVE COORDINATION OF MITIGATION REQUIREMENTS AMONG REGULATORY AGENCIES

Complying with multiple and often conflicting mitigation requirements of state and federal agencies has become increasingly common, often driving up the price tag on projects and delaying projects which are responsible for the protection of the health and safety of the community. It has become increasingly difficult to comply with conflicting regulations that govern day-to-day operations and the building of infrastructure projects.

Federal compensatory mitigation for impacts to wetlands and Waters of the United States comply with the hierarchy established by the Mitigation Rule, which stipulates in descending order of preference 1) mitigation banks, 2) in-lieu fee programs, and 3) permittee-responsible mitigation in consideration of a watershed approach.<sup>18</sup>

Conversely, state agencies typically place higher value on permittee-responsible mitigation, on-site or as close to the impacted site as possible. Compliance with the federal mitigation hierarchy results in higher state agency mitigation ratios and requirements. Thus, the best mitigation option may be the establishment of an in-lieu fee program. However, state and federal agencies have not been supportive of in-lieu fee programs despite their priority level in the Federal Mitigation Rule and their strong recommendation that an in-lieu fee is an effective and useful approach to satisfy compensatory mitigation requirements.

A forum or process should be created which allows for agencies to understand the requirements being placed on permittees, which will decrease the conflicts which are often present. State agencies and federal ones should agree to and accept the same mitigation for the same project impacts to reduce the financial burden on public agencies. This will allow for more efficient permitting and responsible spending of public funds. In-lieu fee programs should be an allowable mitigation option.

Thus we request the LHC to inquire about the costs to government bodies to review duplicative submissions and to resolve conflicting directions, and that the LHC urge regulatory agencies to establish a forum, and then create a process to streamline and ensure permitting consistency among agencies in mitigation approaches.

### L.4. ALLOW PUBLIC ENTITIES TO USE THE OTHER FINANCIAL ASSURANCE MECHANISMS ENUMERATED IN FEDERAL AND STATE LAWS FOR LONG-TERM MANAGEMENT OF COMPENSATORY MITIGATION SITES

Public agencies that conduct or approve projects that have significant environmental impacts are required to obtain permits from various government agencies. As a condition of receiving the permits, the public agency is required to mitigate for the environmental impacts. The mitigation may take the form of setting aside other resource conservation lands. When lands are set aside in mitigation, the law requires that the mitigation lands be protected in perpetuity. More recently however, federal and state permitting agencies have been insistent that endowments

---

<sup>18</sup> See Final Compensatory Mitigation Rule at 33 CFR parts 325 and 332, here: [http://www.usace.army.mil/Portals/2/docs/civilworks/regulatory/final\\_mitig\\_rule.pdf](http://www.usace.army.mil/Portals/2/docs/civilworks/regulatory/final_mitig_rule.pdf); see also Final 2015 Regional Compensatory Mitigation and Monitoring Guidelines for the USACE South Pacific Division, located here: <http://www.spd.usace.army.mil/Portals/13/docs/regulatory/mitigation/MitMon.pdf>

are the only acceptable avenue to ensure the long-term sustainability of a compensatory mitigation site, despite state<sup>19</sup> and federal<sup>20</sup> codes allowing alternative financial assurances to secure projects.

An endowment provides a means of ensuring that funding will be available to provide for the long-term stewardship of the mitigation lands in perpetuity. Typically, the interest on the principle is used to fund the annual management costs. If an entity fails to meet its mitigation obligations, the land and the cost of maintaining it revert to the state.

The USACE determines the compensatory mitigation for a specific project, including the financial assurances for the completion of the mitigation project, as well as financing mechanisms for the long-term management of the mitigation property. By requiring endowments of public agencies, large sums of public funds are locked into an endowment which, otherwise could be used for other essential capital projects and their maintenance.

Moreover, requiring public agencies to fund endowments effectively doubles the cost to local taxpayers for managing specified habitat enhancements or conservation lands. It increases tax payer obligations by millions of dollars, while significantly reducing the funds available to actually carry out proper stewardship and appropriate management of the very sensitive habitats we are all seeking to protect.

Thus we request for inquiry into why state permitting agencies do not allow flexibility in long term financial assurance mechanisms, including exemptions from endowments, for those flood protection agencies and other entities with a long history of responsible fiscal and environmental governance.

**L.5. IMPROVE PERMITTING AGENCIES TIMELINESS AND CONSISTENCY WITH OTHER PLANS APPROVED THROUGH THE ENVIRONMENTAL REVIEW PROCESS.**

State and federal regulatory agencies have routinely taken years to issue permits for both construction and routine maintenance activities. With no clear procedures or guidelines to govern streamlining actions, environmental decision-making and permitting process timelines continue to be impeded.

One example is the Permanente Creek Flood Protection Project which has been wrought with delays from the San Francisco Regional Water Quality Control Board. A permit application was prepared consistent with the approved project environmental documents and submitted to the agencies in September 2013. No permitting progress was made for 16 months while the District evaluated a completely new project design upon which the Regional Water Board insisted. Agreement on the project description was not reached until March 2015. Drafts of State agency permits were finally received by December 2015.

---

<sup>19</sup> See California Government Codes 65966 (b) and 65967 (a) & (b), indicating there is flexibility in methods of funding for the long term stewardship of mitigation property, and that an endowment is not the only option.

<sup>20</sup> See 33 CFR 332.7 and 40 CFR 230.97 at page 19649, *in pertinent part*, "In cases where compensatory mitigation project sites are owned by public entities, it may not be necessary to include provisions for the financing of any required long-term management if, for example, a formal, documented commitment from a government agency is provided (i.e., stewardship commitment)." Public agencies identifying adequate financing at the time of permit issuance may be problematic since agency funding can vary from year-to-year with budget cycles, thus underscoring the need for a formal, documented commitment. Available online, here: [http://www.usace.army.mil/Portals/2/docs/civilworks/regulatory/final\\_mitig\\_rule.pdf](http://www.usace.army.mil/Portals/2/docs/civilworks/regulatory/final_mitig_rule.pdf)

The San Francisquito Creek Flood Reduction, Ecosystem Restoration, and Recreation Project experienced similar obstacles to address agency insistence on preparing various model runs of the project to address potential impacts that were never defined and on removal of an underground pipeline in the vicinity of a proposed project.

Further, agencies have demonstrated a practice of proposing redesign of projects through permitting processes. Even with the best of intentions, redesign of a project after the completion of planning and lead agency project approval circumvents the tenants of an open public process and raises a host of issues with possible unintended consequences and delays. Redesign is likely to require subsequent environmental documentation in compliance with the California Environmental Quality Act (hereinafter “CEQA”). Redesign forces other State and Federal agencies to either wait to begin their permitting processes or inefficiently redo their previous work. Most importantly, redesign flaunts the collaborative efforts of planning projects among internal and external stakeholders; members of the community affected by the project, interested members of the public; and local, State, and Federal agency staff. Changing the lead-agency approved project is a great disservice to the community we serve.

The basic purposes of CEQA are to inform governmental decision makers and the public about the potential, significant environmental effects of proposed activities, identify the ways that environmental damage can be avoided or significantly reduced and prevent significant, avoidable damage to the environment by requiring changes in projects through the use of feasible alternatives or mitigation measures. In compliance with CEQA, projects undergo thorough environmental review prior to lead agency approval. As responsible or trustee agencies, State regulatory agencies are tasked with providing comments to the lead agency through the environmental review process that provide guidance and direction on suitable project alternatives and mitigation measures both during scoping and during the public review period of a Mitigated Negative Declaration or Environmental Impact Report.

Substantive agency comments that satisfy the requirements of CEQA ensure proper project development in an open and transparent public forum. Appropriate engagement through the environmental review process also ensures the discretionary actions of decision-makers are implemented in accordance with agency expectations. Vague and ambiguous comments by state regulatory agencies on CEQA documents do not allow for the decision-makers, the public, nor the impacted community, to understand what post hoc project changes and mitigation requirements are being required beyond the approved project.

Using regulatory authority to force impractical improvements beyond baseline and existing conditions is inappropriate. Consistent with law, there must be an essential nexus between the mitigation measure and a legitimate governmental interest,<sup>21</sup> and the mitigation measure must be “roughly proportional” to the impacts of the project.<sup>22</sup> Mitigation measures are not required for effects which are not found to be significant.<sup>23</sup> In more than one instance, the Regional Water Board has attempted to require as a condition of 401 water quality certifications that the applicant mitigate for impacts not associated with the proposed project.

Thus we request inquiry into why adequate funding for regulatory agencies is not provided, urge the establishment and adoption of procedures that streamline the permitting process, and provide standards and guidance to facilitate consistent environmental review of projects. Additionally, to incentivize completing timely reviews, we recommend the policy to be that when

---

<sup>21</sup> See CEQA 15126.4[a][4][A]

<sup>22</sup> See CEQA 15126.4[a][4][B]

<sup>23</sup> See CEQA 15126.4[a][3]

a state agency fails to issue or deny permits within established timelines, the permitting agency is deemed to have concurred with the automatic issuance of the requested permit.

#### L.6. IMPROVE PERMITTING STAFF INEFFICIENCIES

Finally, regulatory agencies appear to lack adequate staff to process permits in a timely and predictable manner. Engaging staff from agencies early in a project is increasingly difficult due to the lack of staff resources. Streamlining of permits is essential to getting local agency projects out in a timely and cost effective manner.

Given the volume of applications that permitting authorities receive, some have responded by allowing applicants to contract and pay to fund a full-time employee on the authority's staff, to work primarily, if not exclusively, on the applicant's submissions, with applicants prioritizing the projects needing review.

As part of the District's strategy to expedite permitting processes in order to commence vital projects, the District currently pays for one full-time staff member at each the USFWS, the California Department of Fish and Wildlife (hereinafter "DFW"), and the San Francisco Regional Water Quality Control Board (hereinafter "Regional Board") vis-à-vis ABAG.

As one example of an issue we have faced with these staff for which we've paid, with our annual stream maintenance requests, the staff at DFW and the Regional Board respond within a week or two to specific requests and inquiries. However, our experience with USFWS has been drastically different, with it being common to wait several months for a response. When it has been brought to the attention of the Sacramento manager of the USFWS office, we have had better traction. Still, escalation should not be the normative means to obtain responses.

Moreover, as we've spoken with other California infrastructure agencies, their experiences with USFWS have been the same as ours. And while the District accedes federal authorities are far beyond the LHC's purview, it still may be worth your study of other agencies problems on this front, as well as the final report highlighting that climate change adaptation efforts by California special districts are impeded by delays at USFWS, such that a US Representative or Senator from California may be alerted to the issue and work to resolve why multiple staff at USFWS that several California infrastructure agencies pay for aren't actually dedicated and providing timely review of the agencies' permit applications and concerns.

Last, as a prospective solution to many of these issues above, the District along with other Bay Area partners have discussed proposing the creation of a "single regional general permit" whose application potentially would combine information required in Federal and State forms and which would permit a variety of routine work and environmental mitigation. Such a permit also could go to ensure regional peers are not subjected to differing evaluative standards for comparable projects.

#### M. RECOMMENDATIONS FOR EVALUATING SPECIAL DISTRICTS' RESPONSES TO CLIMATE CHANGE.

As the LHC studies special districts' responses to climate change, the LHC should consider individually a special district's historical and contemporary purposes, and then examine if the special district has taken steps to memorialize environmental policies in their governing documents. The null hypothesis for such inquiry is that special districts likely will not have engaged sufficiently on these issues, if they lack the necessary policies in their governing documents mandating the elevation of environmental concerns and the adaptation to and mitigation for climate change.

Further, the LHC should investigate the challenges facing special districts that come through regulatory processes which prevent special districts from achieving projects that provide adequate protections from climate change.

Finally, the LHC should give serious attention to the advantages and benefits of utilizing “adaptive management” strategies by special districts and others engaged in responding to climate change. Adaptive management is a relatively new paradigm that has gained recognition and use in the last generation of natural resources planning. Adaptive management provides infrastructure projects with the necessary flexibility in their design, construction, and management so that modifications may be implemented in response to unforeseen and unexpected changes over time, either at a project site or in the science. Adaptive management is essential for the District’s work, and it should be harnessed by those special districts that are intent on combating climate change.

#### IV. CONCLUSION

The District’s commitment to the environment and meeting the challenges of climate change inspires our daily operations. As we continue to contribute to reducing the county’s carbon footprint through wetlands restoration, habitat conservation, and supporting expansion of trails and open space, the District also tracks its performance and progress towards carbon neutrality through its GHG emissions inventory, which includes accounting for reductions or offsets from water use efficiency, renewable energy production, habitat restoration and enhancement, and green business programs.

In consideration of the critical services that we provide and functions that we serve in Santa Clara County, financial reserves are not a luxury, but rather a necessity for beginning new capital projects in line with our mission, maintaining aging infrastructure, and providing immediate response to unforeseeable events or discoveries that threaten to disrupt our operations.

While we have conveyed our own regulatory concerns here, across the state of California, special districts and public infrastructure agencies are faced with similar inability to effectively and efficiently work with regulatory agencies to ensure that permits are obtained in a timely and predictable manner, and that their financial resources are appropriately utilized.

Climate change is a reality and will affect the District’s mission, assets, and core services in the years and decades ahead. Nevertheless, because of the District’s unique multi-purpose charter to supply water, provide flood protection, and enhance the environment, we successfully utilize a comprehensive regional approach for climate change adaptation and mitigation that would not be possible if our services were fractured and performed by multiple agencies around Santa Clara County.